Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

A99.9 F764Ub

RS

Department of Agriculture

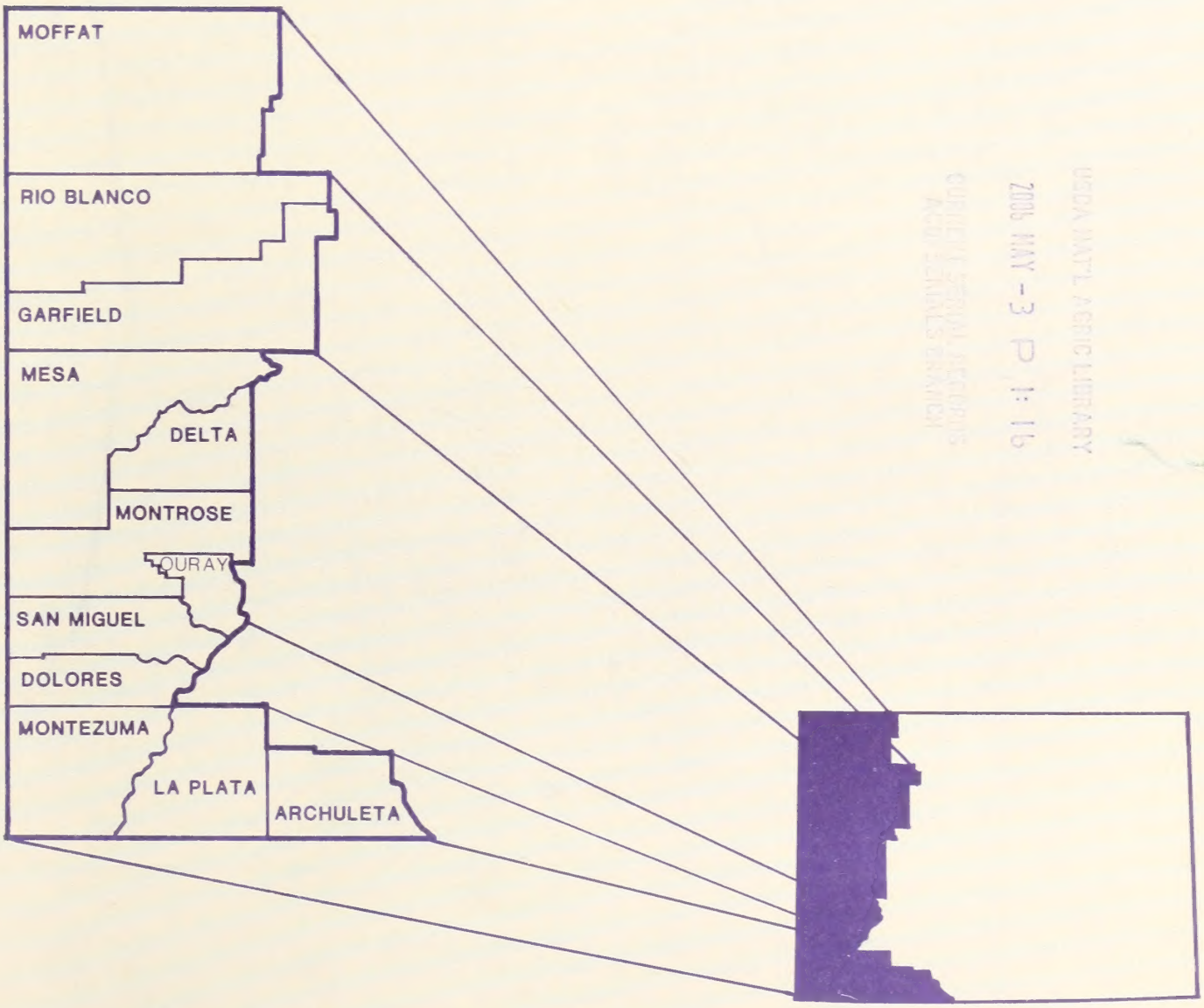
Forest Service

Intermountain Research Station

Resource Bulletin INT-42

Western Colorado: Forest Statistics for State and Private Land, 1983

Frank E. Angele
Velma S. Inama



USDA NATL AGRIC LIBRARY
2006 MAY -3 P 1:16
CURRENT SERIAL RECORDS
ACQUISITIONS & SERIALS BRANCH

THE AUTHORS

FRANK E. ANGELE is a forestry technician with the Forest Survey Research Work Unit at the Intermountain Research Station in Ogden, UT. He holds a B.S. degree in forestry from the University of Idaho, Moscow, and has worked with the Forest Service since 1985.

VELMA S. INAMA was a statistical assistant (now retired) with the Forest Survey Research Work Unit at the Intermountain Research Station in Ogden, UT. Her primary area of responsibility was developing statistical summaries of resource information and quality control.

ACKNOWLEDGMENTS

This report is the result of the combined efforts of numerous people on the Forest Survey staff. In addition to the photo interpretation and field crews, several individuals played key roles in the reduction of basic data into information describing the extent, nature, and condition of the forest resources in Colorado: Dennis Collins supervised the data collection; Sharon Woudenberg and Shirley Waters compiled the data and made summaries; and Susan Brown transformed the data summaries into tables of information. Also, acknowledgment is given to the Colorado State Forest Service for its cooperation and assistance in collecting the inventory data. And we extend a special note of gratitude to the private land owners who allowed the field crews access to the sample locations on their properties.

RESEARCH SUMMARY

Presents land area, timberland area, woodland area, timber inventory, and growth and mortality data for 12 counties in western Colorado. Information and statistical tables are based on Forest Survey data collected from 1981 through 1984 and cover State and private forest resources.

CONTENTS

	Page
Introduction	1
Highlights	2
Area	2
Inventory	2
Components of Change	3
How the Inventory Was Conducted	3
Prefield	3
Field	3
Compilation	3
Data Reliability	3
Terminology and Data Tables	3
Terminology	3
References	6

Figures

1. Counties covered by this report 1
2. Distribution of land area in western Colorado by owner group 2

August 1987

Intermountain Research Station
324 25th Street
Ogden, UT 84401

Forest Survey Tables

Page

1. Area of State and privately owned forest land with percent standard error in western Colorado, 1983 07
2. Net volume, net annual growth, and annual mortality of growing stock and sawtimber on State and privately owned timberland with percent standard error in western Colorado ... 07
3. Total land and water area by ownership class in western Colorado, 1983 08
4. Total land area on State and privately owned land by major land class and ownership class in western Colorado, 1983 08
5. Area of forest land on State and privately owned land by forest type, ownership class, and land class in western Colorado, 1983 09
6. Cubic feet of net volume in trees on State and privately owned forest land by species and ownership class in western Colorado, 1983 ... 09
7. Cubic feet of net annual growth in trees on State and privately owned forest land by species and ownership class in western Colorado, 1982 10
8. Cubic feet of annual mortality in trees on State and privately owned forest land by species and ownership class in western Colorado, 1982 ... 10
9. Area of State and privately owned timberland by forest type, stand-size class, and productivity class in western Colorado, 1983 11
10. Area of State owned timberland by forest type, stand-size class, and productivity class in western Colorado, 1983 12
11. Area of nonindustrial privately owned timberland by forest type, stand-size class, and productivity class in western Colorado, 1983 13
12. Area of State and privately owned timberland by stand volume and ownership class in western Colorado, 1983 14
13. Area of State and privately owned timberland by forest type and area condition class in western Colorado, 1983 14
14. Number of growing-stock trees on State and privately owned timberland by species and diameter class in western Colorado, 1983 15
15. Number of cull and salvable dead trees on State and privately owned timberland by ownership class, and softwoods and hardwoods in western Colorado, 1983 16
16. Net volume of growing stock on State and privately owned timberland by ownership class, forest type, and stand-size class in western Colorado, 1983 16
17. Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class, forest type, and stand-size class in western Colorado, 1983 17
18. Net volume of sawtimber (Scribner rule) on State and privately owned timberland by ownership class, forest type, and stand-size class in western Colorado, 1983 18

Page

19. Net volume of growing stock on State and privately owned timberland by ownership class and species in western Colorado, 1983 18
20. Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class and species in western Colorado, 1983 19
21. Net volume of sawtimber (Scribner rule) on State and privately owned timberland by ownership class and species in western Colorado, 1983 19
22. Net volume of growing stock on State and privately owned timberland by species and diameter class in western Colorado, 1983 20
23. Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by species and diameter class in western Colorado, 1983 21
24. Net volume of sawtimber (Scribner rule) on State and privately owned timberland by species and diameter class in western Colorado, 1983 22
25. Net volume of timber on State and privately owned timberland by class of timber, and softwoods and hardwoods in western Colorado, 1983 23
26. Net volume of growing stock on State and privately owned timberland by forest type and species in western Colorado, 1983 23
27. Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by forest type and species in western Colorado, 1983 24
28. Net volume of sawtimber (Scribner rule) on State and privately owned timberland by forest type and species in western Colorado, 1983 ... 24
29. Net annual growth of growing stock on State and privately owned timberland by ownership class and species in western Colorado, 1982 .. 25
30. Net annual growth of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982 25
31. Net annual growth of sawtimber (Scribner rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982 26
32. Net annual growth of growing stock on State and privately owned timberland by species and diameter class in western Colorado, 1982 27
33. Net annual growth of sawtimber (International ¼-inch rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982 28
34. Net annual growth of sawtimber (Scribner rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982 29
35. Annual mortality of growing stock on State and privately owned timberland by ownership class and species in western Colorado, 1982 30

Page

36. Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982 30
37. Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982 31
38. Annual mortality of growing stock on State and privately owned timberland by species and diameter class in western Colorado, 1982 31
39. Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982 32
40. Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982 32
41. Annual mortality of growing stock on State and privately owned timberland by cause of death and species in western Colorado, 1982 33
42. Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by cause of death and species in western Colorado, 1982 33
43. Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by cause of death and species in western Colorado, 1982 34
44. Area of State and privately owned woodland by ownership class and forest type in western Colorado, 1983 34
45. Net volume of State and privately owned woodland by ownership class and species in western Colorado, 1983 34
46. Net annual growth of State and privately owned woodland by ownership class and species in western Colorado, 1982 35
47. Annual mortality of State and privately owned woodland by ownership class and species in western Colorado, 1982 35
48. Area of State and privately owned timberland by county and ownership class in western Colorado, 1983 35

Page

49. Net volume of growing stock on State and privately owned timberland by county and ownership class in western Colorado, 1983 ... 36
50. Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by county and ownership class in western Colorado, 1983 36
51. Net volume of sawtimber (Scribner rule) on State and privately owned timberland by county and ownership class in western Colorado, 1983 37
52. Net annual growth of growing stock on State and privately owned timberland by county and ownership class in western Colorado, 1982 ... 37
53. Net annual growth of sawtimber (International ¼-inch rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982 38
54. Net annual growth of sawtimber (Scribner rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982 38
55. Annual mortality of growing stock on State and privately owned timberland by county and ownership class in western Colorado, 1982 ... 39
56. Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982 39
57. Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982 40
58. Area of State and privately owned woodland by county and ownership class in western Colorado, 1983 40
59. Net volume of State and privately owned woodland by county and ownership class in western Colorado, 1983 41
60. Net annual growth of State and privately owned woodland by county and ownership class in western Colorado, 1982 41
61. Annual mortality of State and privately owned woodland by county and ownership class in western Colorado, 1982 42

Western Colorado: Forest Statistics for State and Private Land, 1983

Frank E. Angele
Velma S. Inama

INTRODUCTION

This resource bulletin reports the findings of the Forest Survey inventory of a sample area defined as State and private lands in Archuleta, Delta, Dolores, Garfield, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Rio Blanco, and San Miguel Counties of western Colorado (fig. 1). The two-phase survey began with prefield work in June 1981. The field phase involved, in whole or in part, successive summers from 1981 to 1984 with the bulk of the data collected in 1982.

The data in this report pertain only to the State and private forest resources of the counties listed above. Data for lands administered by various public agencies such as National Forest Systems and Bureau of Land Management will be included in a subsequent, comprehensive statewide report that will include all lands and all owners.

The primary objective of Forest Survey—a continuing, nationwide undertaking of the Forest Service, U.S. Department of Agriculture—is to provide an assessment of the renewable resources for forest and rangelands of the Nation. Fundamental to the accomplishment of the objective are the periodic State-by-State resource inventories. Originally, Forest Survey was authorized by the McSweeney-McNary Act of 1928. The current authorization is through the Renewable Resources Research Act of 1978.

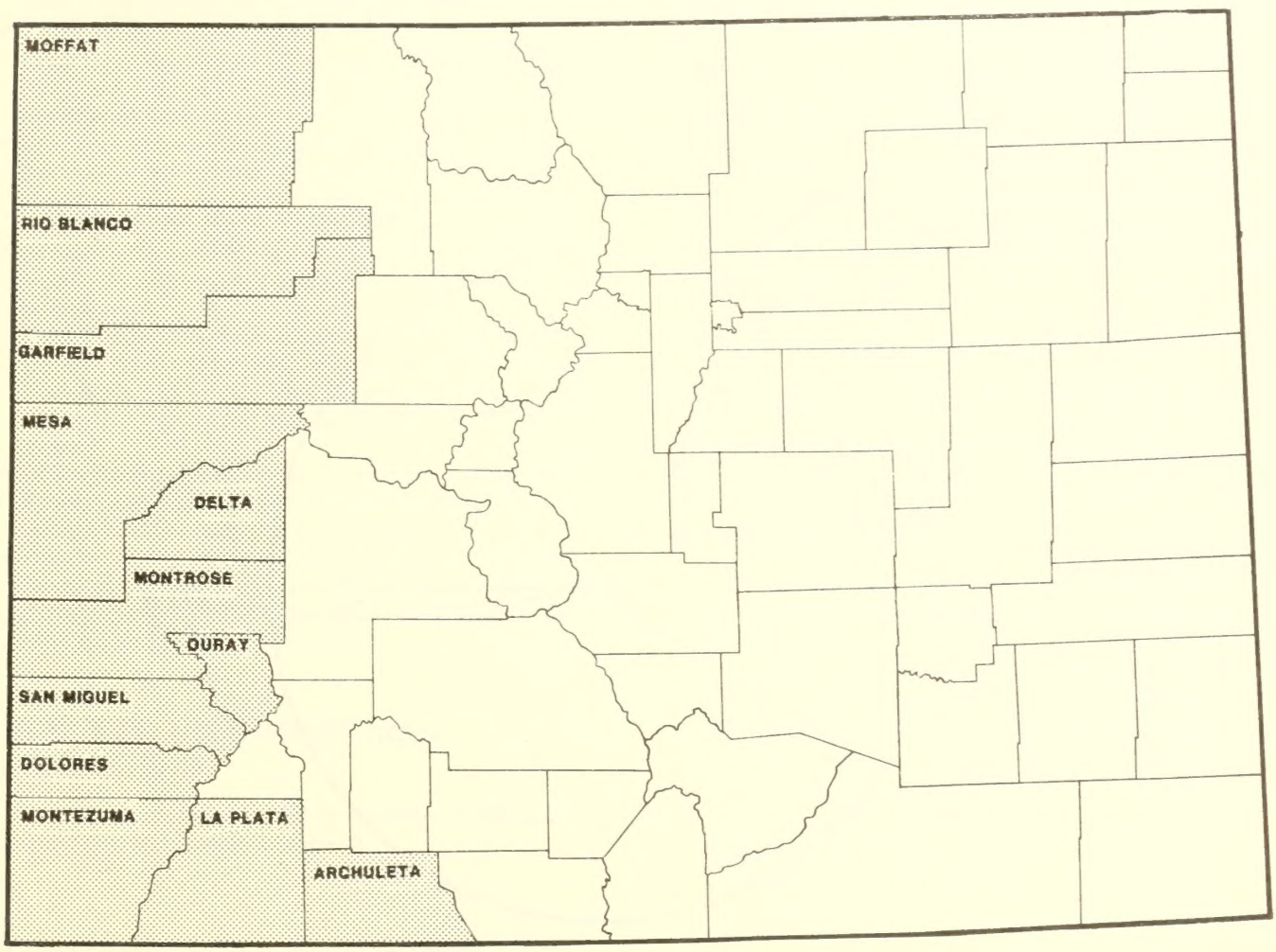


Figure 1—Counties covered by this report.

The Intermountain Research Station with headquarters in Ogden, UT, conducts the forest resource inventories for the Rocky Mountain States of Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, western South Dakota, Utah, Wyoming, western Texas, and Oklahoma's panhandle. These inventories provide information on the extent and condition of State and privately owned forest lands and most other lands not in the National Forest System, volume of timber, and rates of timber growth, removals, and mortality.

These data, when combined with similar information on National Forest lands, provide a basis for forming forest policies and programs and for the orderly development and use of the resource.

HIGHLIGHTS

Area

- State and private lands comprise 6.7 million acres, or nearly 41 percent of the total land area of western Colorado (fig. 2).
- Forests occupy about 2.3 million acres including reserved land, or 34 percent of the total State and private land area.
- Over 36 percent of the forest land, 811,100 acres, is classified as nonreserved timberland, and 97 percent of this area is privately owned.
- Ponderosa pine forest type occurs on 37 percent of the privately owned timberland, and aspen forest type occurs on 35 percent of the area.
- Woodland forest types on privately owned land are composed of pinyon-juniper type (56 percent), oak type (29 percent), and juniper type (15 percent).

Inventory

- Timberland growing-stock volume is about 1.1 billion cubic feet, and sawtimber volume totals about 3.9 billion board feet (International ¼-inch rule).
- Aspen accounts for 37 percent of the timberland growing stock, ponderosa pine accounts for 32 percent, and Engelmann spruce accounts for 16 percent.
- Pinyon and juniper account for 90 percent of the net cubic-foot woodland volume, while woodland hardwoods compose the remaining 10 percent.
- Net woodland volume is just over 664 million cubic feet, net annual growth is about 8.9 million cubic feet, and annual mortality is 1.8 million cubic feet.
- About 84 percent of the timberland growing stock (920.7 million cubic feet) is in trees less than 19 inches diameter at breast height (d.b.h.).
- Rotten cull and salvable dead trees total 73 million cubic feet, about 7 percent of the timberland sound wood volume.
- Archuleta, Garfield, and La Plata Counties combined account for nearly 51 percent of timberland net volume growing stock and nearly 56 percent of sawtimber net volume.

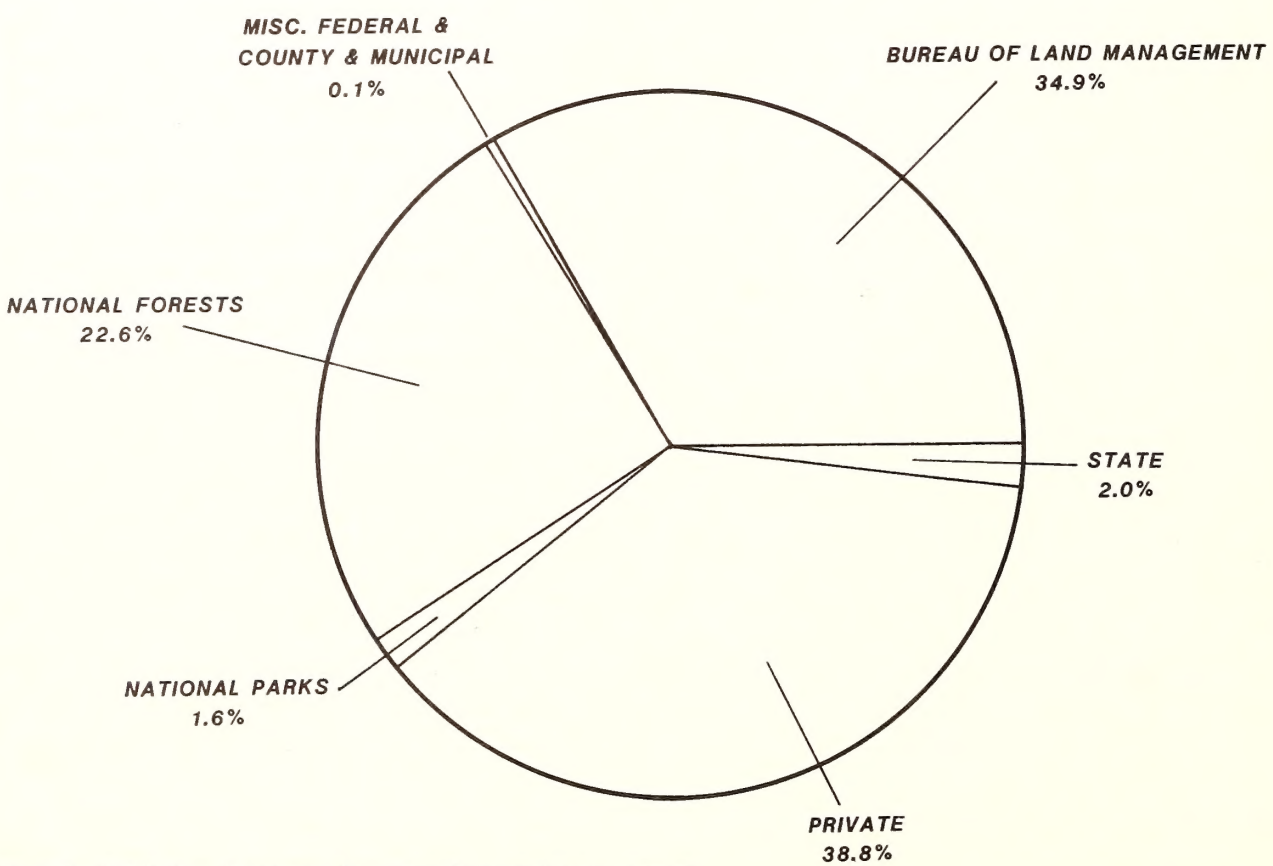


Figure 2—Distribution of land area in western Colorado by owner group.

Components of Change

Growth

- Net annual growth for timberland was nearly 19 million cubic feet, 96 percent of which is on private land.
- About 58 percent of the timberland is capable of producing more than 50 cubic feet of wood per acre per year. Average net annual growth in 1982 was just over 23 cubic feet per acre per year.
- Net annual growth consisted of ponderosa pine (37 percent), Engelmann spruce (22 percent), and aspen (21 percent).
- Woodland net annual growth was about 8.9 million cubic feet, of which 97 percent is on private land.

Mortality

- The annual mortality of 6.6 million cubic feet offsets 26 percent of the timberland gross annual growth.
- Aspen accounts for 5.7 million cubic feet, 87 percent of the timberland annual mortality.

Removals

- An estimated 8.1 million cubic feet of industrial roundwood material (47.8 million board feet, International ¼-inch rule) was harvested in 1982 (includes all land owners in the sample area), 21 percent of which came from State and private land (McLain 1985).
- Of the total cubic-foot roundwood harvest, 75 percent came from Montezuma (37 percent), Montrose (19 percent), and Dolores (19 percent) Counties (McLain 1985) (includes all land owners in the sample area).
- Spruce contributed the largest percentage to the industrial roundwood harvest (36 percent), with aspen and ponderosa pine each contributing 28 percent (McLain 1985).
- Sawlogs accounted for nearly 99 percent of the roundwood volume harvested (includes all land owners in the sample area).
- Total fuelwood harvest was over 88,100 cords (7.1 million cubic feet) in 1982, of which 32 percent was cut from State and private land. This was equal to 87 percent of the roundwood harvest (McLain and Booth 1985).
- Of the fuelwood, 65 percent was harvested from Mesa County, and 71 percent of this volume came from private land (McLain and Booth 1985).
- Ponderosa pine accounted for 33 percent of the total fuelwood harvest, fruit trees 25 percent, and aspen 24 percent (includes all land owners in the sample area) (McLain and Booth 1985).

HOW THE INVENTORY WAS CONDUCTED

The inventory was designed to provide reliable statistics at the State and sample area levels.

Prefield

Primary area estimates were based on the classification of 66,431 sample points systematically placed on the latest aerial photographs available. The photo points, adjusted to meet known land areas, were used to stratify and compute area expansion factors for the field sample data.

Field

Land classification and estimates for timber characteristics and volume were based on observations or measurements or both recorded at 628 ground sample locations, of which 267 were forested. Sample trees were selected using a 5-point sample cluster, which included 1/300-acre fixed radius plots for trees less than 5 inches d.b.h., and 40 basal area factor variable radius plots for trees 5 inches d.b.h. or larger.

Compilation

All photo and field data were loaded onto tape and stored for computer editing, computation, and tabulation. Final estimates from these data were based on statistical summaries, a portion of which is included in this bulletin. Volume and defect were computed using equations developed by Edminster and others (1980, 1981), Kemp (1958), Chojnacky (1985), Meyers (1964), and Meyers and others (1972).

DATA RELIABILITY

Individual cells within tables should be used with caution. Some are based on very small sample sizes resulting in high sampling errors. The standard error percentages shown in tables 1 and 2 were calculated at the 67 percent confidence level.

TERMINOLOGY AND DATA TABLES

The following section contains definitions that are relevant to the timber resource data in this bulletin. Forest area and timber resource data for western Colorado are displayed in tables 3 through 61.

TERMINOLOGY

Acceptable trees—Growing-stock trees meeting specified standards of size and quality, but not qualifying as desirable trees.

Area condition class—A classification of timberland reflecting the degree to which the site is being utilized by growing-stock trees and other conditions affecting current and prospective timber growth (see Stocking):

Class 10—Areas fully stocked with desirable trees and not overstocked.

Class 20—Areas fully stocked with desirable trees, but overstocked with all live trees.

Class 30—Areas medium to fully stocked with desirable trees and with less than 30 percent of the area controlled by other trees, or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Class 40—Areas medium to fully stocked with desirable trees and with 30 percent or more of the area controlled by other trees, or conditions that ordinarily prevent occupancy by desirable trees, or both.

Class 50—Areas poorly stocked with desirable trees, but fully stocked with growing-stock trees.

Class 60—Areas poorly stocked with desirable trees, but with medium to full stocking of growing-stock trees.

Class 70—Areas nonstocked or poorly stocked with desirable trees, and poorly stocked with growing-stock trees.

Class 80—Low-risk old-growth stands.

Class 90—High-risk old-growth stands.

Nonstocked—Areas less than 10 percent stocked with growing-stock trees.

Basal area—The cross-sectional area of a tree expressed in square feet. For timber species the calculation is based on diameter at breast height (d.b.h.); for woodland species it is based on diameter at root collar (d.r.c.).

Cord—A pile of stacked wood equivalent to 128 cubic feet of wood and air space having standard dimensions of 4 by 4 by 8 feet.

Cull trees—Live trees that are unmerchantable now or prospectively (see Rough trees and Rotten trees).

Cull volume—Portions of a tree's volume that are not usable for wood products because of rot, form, missing material, or other cubic-foot defect. Form and sound defects include severe sweep and crook, forks, extreme form reduction, large deformities, and dead material.

Deferred forest land—Forest lands within the National Forest System that are under study for possible inclusion in the Wilderness System.

Desirable trees—Growing-stock trees (1) having no serious defect in quality to limit present or prospective use for timber products, (2) of relatively high vigor, and (3) containing no pathogens that may result in death or serious deterioration within the next decade.

Diameter at breast height (d.b.h.)—Diameter of the stem measured at 4.5 feet above the ground.

Diameter at root collar (d.r.c.)—Diameter equivalent at the point nearest the ground line that represents the basal area of the tree stem or stems.

Diameter classes—Tree diameters, either d.b.h. or d.r.c., grouped into 2-inch classes labeled by the midpoint of the class.

Farmer-owned lands—Lands owned by a person who operates a farm and who either does the work or directly supervises the work.

Forest industry lands—Lands owned by companies or individuals operating a primary wood-processing plant.

Forest land—Land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Forest trees—Woody plants having a well-developed stem or stems, usually more than 12 feet in height at maturity, with a generally well-defined crown.

Forest type—A classification of forest land based upon and named for the tree species presently forming a plurality of live-tree stocking.

Growing-stock trees—Live sawtimber trees, poletimber trees, saplings, and seedlings of timber species meeting specified standards of quality and vigor; excludes cull trees.

Growing-stock volume—Net cubic-foot volume in live growing-stock trees from a 1-foot stump to a minimum 4-inch top (of central stem) outside bark or to the point where the central stem breaks into limbs.

Growth—See definition for net annual growth.

Hardwood trees—Dicotyledonous trees, usually broad-leaved and deciduous.

High-risk old-growth stands—Timber stands over 100 years old in which the majority of the trees are not expected to survive more than 10 years.

Indian lands—Indian lands held in trust by the Federal Government.

Industrial wood—All commercial roundwood products except fuelwood.

Land area—The area of dry land and land temporarily or partially covered by water such as marshes, swamps, and river flood plains, streams, sloughs, estuaries, and canals less than 120 feet wide; and lakes, reservoirs, and ponds less than 1 acre in size.

Logging residues—The unused portions of growing-stock trees cut or killed by logging.

Low-risk old-growth stands—Timber stands over 100 years old in which the majority of the trees are expected to survive more than 10 years.

Miscellaneous Federal lands—Lands administered by Federal agencies other than the U.S. Department of Agriculture, Forest Service or U.S. Department of the Interior, Bureau of Land Management.

Mortality—The net volume of growing-stock trees that have died from natural causes during a specified period.

National Forest lands—Public lands administered by the U.S. Department of Agriculture, Forest Service.

National Resource lands—Public lands administered by the U.S. Department of the Interior, Bureau of Land Management.

Net annual growth—The net average annual increase in the volume of trees during a specified period.

Net volume in board feet—The gross board-foot volume in the sawlog portion of growing-stock trees, less deductions for cull volume.

Net volume in cubic feet—Gross cubic-foot volume in the merchantable portion of trees less deductions for cull volume. For timber species, volume is computed for the merchantable stem from a 1-foot stump to a minimum 4-inch top diameter outside bark, or to the point where the central stem breaks into limbs. For woodland species, volume is computed outside bark (o.b.) for all woody material above d.r.c. that is larger than 1.5 inches in diameter (o.b.).

Nonforest land—Land that does not currently qualify as forest land.

Nonindustrial private—All private ownerships except forest industry.

Nonstocked areas—Forest land less than 10 percent stocked with live trees.

Old-growth stands—Stands of timber species over 100 years old.

Other private land—Privately owned land other than forest industry or farmer-owned.

Other public land—Public land administered by agencies other than the U.S. Department of Agriculture, Forest Service.

Other removals—The net volume of growing-stock trees removed from the inventory by cultural operations such as timber-stand improvement, by land clearing, and by changes in land use such as a shift to wilderness.

Poletimber stands—Stands at least 10 percent stocked with growing-stock trees, in which half or more of the stocking is sawtimber or poletimber trees or both, with poletimber stocking exceeding that of sawtimber (see definition for Stocking).

Poletimber trees—Live trees of timber species at least 5 inches d.b.h. but smaller than sawtimber size.

Potential growth—The average net annual cubic-foot growth per acre at culmination of mean annual growth attainable in fully stocked natural stands.

Primary wood-processing plants—Plants using roundwood products such as sawlogs, pulpwood bolts, veneer logs, etc.

Productivity class—A classification of forest land in terms of potential growth.

Removals—The net volume of growing-stock trees removed from the inventory by harvesting, cultural operations, land clearings, or changes in land use.

Reserved forest land—Forest land withdrawn from tree utilization through statute or administrative designation.

Residues:

Coarse residues—Plant residues suitable for chipping, such as slabs, edgings, and ends.

Fine residues—Plant residues not suitable for chipping, such as sawdust, shavings, and veneer clippings.

Plant residues—Wood materials from primary manufacturing plants that are not used for any product.

Rotten tree—A live poletimber or sawtimber tree with more than 67 percent of its total volume cull (cubic-foot) and with more than half of the cull volume attributable to rotten or missing material.

Rough tree—A live poletimber or sawtimber tree with more than 67 percent of its total volume cull (cubic-foot) and with less than half of the cull volume attributable to rotten or missing material.

Roundwood—Logs, bolts, or other round sections cut from trees.

Salvable dead trees—Standing or down dead trees that are currently merchantable by regional standards.

Saplings—Live trees of timber species 1 to 4.9 inches d.b.h. or woodland species 1 to 2.9 inches d.r.c.

Sapling and seedling stands—Timberland stands at least 10 percent stocked on which more than half of the stocking is saplings or seedlings or both.

Sawlog portion—That part of the bole of sawtimber trees between a 1-foot stump and the sawlog top.

Sawlog top—The point on the bole of sawtimber trees above which a sawlog cannot be produced. The minimum sawlog top is 7 inches diameter o.b. for softwoods and 9 inches diameter o.b. for hardwoods.

Sawtimber stands—Stands at least 10 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Sawtimber trees—Live trees of timber species meeting regional size and defect specifications. Softwood trees must be at least 9 inches d.b.h. and hardwood trees 11 inches d.b.h.

Sawtimber volume—Net volume in board feet of the sawlog portion of live sawtimber trees.

Seedlings—Established live trees of timber species less than 1 inch d.b.h. or woodland species less than 1 inch d.r.c.

Softwood trees—Monocotyledonous trees, usually evergreen, having needle or scalelike leaves.

Standard error—An expression of the degree of confidence that can be placed on an estimated total or average obtained by statistical sampling methods. Standard errors do not include technique errors that could occur in photo classification of areas, field measurements, or compilation of data.

Stand-size classes—A classification of forest land based on the predominant size of trees present (see Sawtimber stands, Poletimber stands, and Sapling and seedling stands).

State, county, and municipal lands—Lands administered by States, counties, or local public agencies, or lands leased by these governmental units for more than 50 years.

Stocking—An expression of the extent to which growing space is effectively utilized by present or potential growing-stock trees of timber species. Percentage stocking is the ratio of actual stocking to full stocking for

comparable sites and stands, using basal area as the basis for comparison.

Timberland—Forest land where timber species make up at least 10 percent stocking.

Timber species—Tree species traditionally used for industrial wood products. In the Rocky Mountain States, these include aspen and cottonwood hardwood species and all softwood species except pinyon and juniper.

Timber stand improvement—Treatments such as thinning, pruning, release cutting, girdling, weeding, or poisoning of unwanted trees aimed at improving growing conditions for the remaining trees.

Upper-stem portion—That part of the main stem or fork of sawtimber trees above the sawlog top to a minimum top diameter of 4 inches o.b. or to the point where the main stem or fork breaks into limbs.

Water—Streams, sloughs, estuaries, and canals more than 120 feet wide, and lakes, reservoirs, and ponds more than 1 acre in size at mean high water level.

Wilderness—An area of undeveloped land currently included in the Wilderness System, managed so as to preserve its natural conditions and retain its primeval character and influence.

Woodland—Forest land where timber species make up less than 10 percent stocking.

Woodland species dead volume—Net volume of dead woodland trees and dead net volume portion of live woodland tree species.

Woodland species live volume—Net cubic-foot volume in live woodland tree species.

Woodland species—Tree species not usually converted into industrial wood products. Common uses are fuelwood, fenceposts, and Christmas trees.

REFERENCES

Chojnacky, David C. 1985. Pinyon-juniper volume equations for the central Rocky Mountain States. Res. Pap. INT-339. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 27 p.

Edminster, Carleton B.; Mowrer, H. Todd; Hinds, Thomas E. 1981. Volume tables and point-sampling factors for aspen in Colorado. Res. Pap. RM-232. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 16 p.

Edminster, Carleton B.; Beeson, Robert T.; Metcalf, Gary E. 1980. Volume tables and point-sampling factors for ponderosa pine in the Front Range of Colorado. Res. Pap. RM-218. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 14 p.

Kemp, Paul D. 1958. Volume tables. Unpublished report on file at: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT.

McLain, William H. 1985. Colorado's industrial roundwood production and mill residues, 1982. Resour. Bull. INT-35. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 13 p.

McLain, William H.; Booth, Gordon D. 1985. Colorado's 1982 fuelwood harvest. Resour. Bull. INT-36. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 11 p.

Meyers, Clifford A. 1964. Volume tables and point-sampling factors for lodgepole pine in Colorado and Wyoming. Res. Pap. RM-6. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 16 p.

Meyers, Clifford A.; Edminster, Carleton B. 1972. Volume tables and point-sampling factors for Engelmann spruce in Colorado and Wyoming. Res. Pap. RM-95. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 23 p.

FOREST SURVEY TABLES

Table 1.--Area of State and privately owned forest land with percent standard error in western Colorado, 1983

Item	Softwoods		Hardwoods		All types	
	Acres	Percent standard error	Acres	Percent standard error	Acres	Percent standard error
Timberland	498,055	±9.2	313,034	±10.1	811,089	±6.5
Woodland	1,015,473	±5.8	419,070	±14.8	1,434,543	±5.3
Reserved forest land:[1]						
Timberland	1,023		916		1,939	
Woodland	1,321		534		1,855	
Total forest land	1,515,872		733,554		2,249,426	

[1]Reserved land areas are estimated from aerial photos without field verification; therefore, standard errors are not calculated.

Table 2.--Net volume, net annual growth, and annual mortality of growing stock and sawtimber on State and privately owned timberland with percent standard error in western Colorado

Item	Softwoods		Hardwoods		All species	
	Volume	Percent standard error	Volume	Percent standard error	Volume	Percent standard error
Net volume, 1983:						
Growing stock (M cubic feet)	657,601	±13.6	439,205	±16.2	1,096,806	±10.2
Sawtimber[1] (M board feet)	2,915,760	±14.7	955,063	±26.1	3,870,823	±12.8
Sawtimber[2] (M board feet)	2,502,967	±14.8	810,671	±26.0	3,313,638	±12.9
Net annual growth, 1982:						
Growing stock (M cubic feet)	14,162	±14.0	4,808	±40.0	18,970	±14.3
Sawtimber[1] (M board feet)	66,010	±15.6	51,948	±42.1	117,958	±20.4
Sawtimber[2] (M board feet)	57,879	±15.4	44,313	±41.9	102,192	±20.1
Annual mortality, 1982:						
Growing stock (M cubic feet)	591	±96.7	6,002	±27.0	6,593	±26.1
Sawtimber[1] (M board feet)	2,976	±96.7	6,460	±59.2	9,436	±50.7
Sawtimber[2] (M board feet)	2,390	±96.7	5,468	±58.9	7,858	±50.5

[1]International ¼-inch rule.

[2]Scribner rule.

Table 3.--Total land and water area by ownership class in western Colorado, 1983

Ownership class	Area
	- - Acres - -
Land:	
Public:	
National Forest	3,696,869
National Parks[1]	266,366
Other:	
Bureau of Land Management	5,703,669
Miscellaneous federal	12,357
State	331,497
County and municipal	1,235
Total other public	6,048,758
Total public	10,011,993
Private	6,353,511
Total land area	16,365,504
Census water	52,998
Total land and water[2]	16,418,502

[1]Not included with miscellaneous Federal, a component of other public, for purpose of clarity.

[2]U.S. Bureau of the Census, land and water area of the United States, 1980.

Table 4.--Total land area on State and privately owned land by major land class and ownership class in western Colorado, 1983

Land class	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - - - - Acres - - - - - - - - -		
Timberland:			
Reserved	1,939	--	1,939
Nonreserved	27,814	783,275	811,089
Total	29,753	783,275	813,028
Woodland:			
Reserved	1,855	--	1,855
Nonreserved	52,654	1,381,889	1,434,543
Total	54,509	1,381,889	1,436,398
Total forest land:			
Reserved	3,794	--	3,794
Nonreserved	80,468	2,165,164	2,245,632
Total	84,262	2,165,164	2,249,426
Nonforest land	247,235	4,188,347	4,435,582
Total land area	331,497	6,353,511	6,685,008

Table 5.--Area of forest land on State and privately owned land by forest type, ownership class, and land class in western Colorado, 1983

Forest type	Ownership class and land class						
	State		Nonindustrial private		All owners		
	Reserved	Nonreserved	Reserved	Nonreserved	Reserved	Nonreserved	Total
	Acres						
Douglas-fir	578	3,939	--	93,228	578	97,167	97,745
Ponderosa pine	445	10,783	--	293,090	445	303,873	304,318
White fir	--	716	--	21,547	--	22,263	22,263
Spruce	--	3,538	--	71,214	--	74,752	74,752
Aspen	471	8,124	--	276,394	471	284,518	284,989
Cottonwood	445	714	--	27,802	445	28,516	28,961
Total timberland	1,939	27,814	--	783,275	1,939	811,089	813,028
Pinyon-juniper	1,321	28,369	--	774,752	1,321	803,121	804,442
Juniper	--	11,444	--	200,908	--	212,352	212,352
Oak	534	12,841	--	406,229	534	419,070	419,604
Total woodland	1,855	52,654	--	1,381,889	1,855	1,434,543	1,436,398
Total all types	3,794	80,468	--	2,165,164	3,794	2,245,632	2,249,426

Table 6.--Cubic feet of net volume in trees on State and privately owned forest land by species and ownership class in western Colorado, 1983

Species	Ownership class		
	State	Nonindustrial private	Total
	Thousand cubic feet		
Douglas-fir	3,277	91,022	94,299
Ponderosa pine	12,497	340,313	352,810
Subalpine fir	378	8,938	9,316
White fir	881	25,218	26,099
Engelmann spruce	8,773	166,430	175,203
Aspen	11,853	388,574	400,427
Cottonwood	1,177	37,601	38,778
Total timberland species	38,836	1,058,096	1,096,932
Pinyon/juniper	21,673	590,671	612,344
Woodland hardwoods	2,346	79,363	81,709
Total woodland species	24,019	670,034	694,053
Total all species	62,855	1,728,130	1,790,985

Table 7.--Cubic feet of net annual growth in trees on State and privately owned forest land by species and ownership class in western Colorado, 1982

Species	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - - Thousand cubic feet - - - - - - - - -		
Douglas-fir	102	2,781	2,883
Ponderosa pine	251	6,703	6,954
Subalpine fir	-5	-150	-155
White fir	15	433	448
Engelmann spruce	207	3,950	4,157
Aspen	139	3,806	3,945
Cottonwood	29	834	863
Total timberland species	738	18,357	19,095
Pinyon/juniper	132	4,848	4,980
Woodland hardwoods	113	3,873	3,986
Total woodland species	245	8,721	8,966
Total all species	983	27,078	28,061

Table 8.--Cubic feet of annual mortality in trees on State and privately owned forest land by species and ownership class in western Colorado, 1982

Species	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - - Thousand cubic feet - - - - - - - - -		
Subalpine fir	20	571	591
Aspen	172	5,567	5,739
Cottonwood	--	263	263
Total timberland species	192	6,401	6,593
Pinyon/juniper	116	1,473	1,589
Woodland hardwoods	9	368	377
Total woodland species	125	1,841	1,966
Total all species	317	8,242	8,559

Table 9.--Area of State and privately owned timberland by forest type, stand-size class, and productivity class in western Colorado, 1983

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
	Acres				
Douglas-fir:					
Sawtimber	--	59,752	25,379	--	85,131
Poletimber	--	--	12,036	--	12,036
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	59,752	37,415	--	97,167
Ponderosa pine:					
Sawtimber	18,669	136,945	128,989	--	284,603
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	19,270	--	--	19,270
Total	18,669	156,215	128,989	--	303,873
White fir:					
Sawtimber	--	12,037	--	--	12,037
Poletimber	--	--	--	--	--
Sapling and seedling	10,226	--	--	--	10,226
Nonstocked	--	--	--	--	--
Total	10,226	12,037	--	--	22,263
Spruce:					
Sawtimber	18,668	56,084	--	--	74,752
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	18,668	56,084	--	--	74,752
Aspen:					
Sawtimber	20,453	22,502	34,933	--	77,888
Poletimber	--	54,205	129,923	--	184,128
Sapling and seedling	--	11,251	11,251	--	22,502
Nonstocked	--	--	--	--	--
Total	20,453	87,958	176,107	--	284,518
Cottonwood:					
Sawtimber	--	28,516	--	--	28,516
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	28,516	--	--	28,516
All types:					
Sawtimber	57,790	315,836	189,301	--	562,927
Poletimber	--	54,205	141,959	--	196,164
Sapling and seedling	10,226	11,251	11,251	--	32,728
Nonstocked	--	19,270	--	--	19,270
Total	68,016	400,562	342,511	--	811,089

Table 10.--Area of State owned timberland by forest type, stand-size class, and productivity class in western Colorado, 1983

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
	Acres				
Douglas-fir:					
Sawtimber	--	1,673	1,864	--	3,537
Poletimber	--	--	402	--	402
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	1,673	2,266	--	3,939
Ponderosa pine:					
Sawtimber	636	3,916	5,748	--	10,300
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	483	--	--	483
Total	636	4,399	5,748	--	10,783
White fir:					
Sawtimber	--	402	--	--	402
Poletimber	--	--	--	--	--
Sapling and seedling	314	--	--	--	314
Nonstocked	--	--	--	--	--
Total	314	402	--	--	716
Spruce:					
Sawtimber	636	2,902	--	--	3,538
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	636	2,902	--	--	3,538
Aspen:					
Sawtimber	629	527	923	--	2,079
Poletimber	--	1,419	4,098	--	5,517
Sapling and seedling	--	264	264	--	528
Nonstocked	--	--	--	--	--
Total	629	2,210	5,285	--	8,124
Cottonwood:					
Sawtimber	--	714	--	--	714
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	714	--	--	714
All types:					
Sawtimber	1,901	10,134	8,535	--	20,570
Poletimber	--	1,419	4,500	--	5,919
Sapling and seedling	314	264	264	--	842
Nonstocked	--	483	--	--	483
Total	2,215	12,300	13,299	--	27,814

Table 11.--Area of nonindustrial privately owned timberland by forest type, stand-size class, and productivity class in western Colorado, 1983

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
	- - - - - - - - - - - - - Acres - - - - - - - - - - - - -				
Douglas-fir:					
Sawtimber	--	58,079	23,515	--	81,594
Poletimber	--	--	11,634	--	11,634
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	58,079	35,149	--	93,228
Ponderosa pine:					
Sawtimber	18,033	133,029	123,241	--	274,303
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	18,787	--	--	18,787
Total	18,033	151,816	123,241	--	293,090
White fir:					
Sawtimber	--	11,635	--	--	11,635
Poletimber	--	--	--	--	--
Sapling and seedling	9,912	--	--	--	9,912
Nonstocked	--	--	--	--	--
Total	9,912	11,635	--	--	21,547
Spruce:					
Sawtimber	18,032	53,182	--	--	71,214
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	18,032	53,182	--	--	71,214
Aspen:					
Sawtimber	19,824	21,975	34,010	--	75,809
Poletimber	--	52,786	125,825	--	178,611
Sapling and seedling	--	10,987	10,987	--	21,974
Nonstocked	--	--	--	--	--
Total	19,824	85,748	170,822	--	276,394
Cottonwood:					
Sawtimber	--	27,802	--	--	27,802
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	27,802	--	--	27,802
All types:					
Sawtimber	55,889	305,702	180,766	--	542,357
Poletimber	--	52,786	137,459	--	190,245
Sapling and seedling	9,912	10,987	10,987	--	31,886
Nonstocked	--	18,787	--	--	18,787
Total	65,801	388,262	329,212	--	783,275

Table 12.--Area of State and privately owned timberland by stand volume and ownership class in western Colorado, 1983

Stand volume per acre[1]	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - - - Acres - - - - - - -		
Less than 1,500 board feet	5,572	193,735	199,307
1,500 to 4,999 board feet	10,092	259,620	269,712
5,000 to 9,999 board feet	9,419	260,123	269,542
10,000 board feet or more	2,731	69,797	72,528
All classes	27,814	783,275	811,089

[1]International $\frac{1}{4}$-inch rule.

Table 13.--Area of State and privately owned timberland by forest type and area condition class in western Colorado, 1983

Forest type	Area condition class									Nonstocked	All classes
	10	20	30	40	50	60	70	80	90		
	- - - - - - - - - - - - - - - - Acres - - - - - - - - - - - - - - - -										
Douglas-fir	--	--	--	--	--	59,752	24,726	--	12,689	--	97,167
Ponderosa pine	--	--	--	--	31,358	54,777	144,231	--	54,237	19,270	303,873
White fir	--	--	--	--	--	10,227	12,036	--	--	--	22,263
Spruce	--	--	--	--	12,689	--	43,394	--	18,669	--	74,752
Aspen	--	--	--	--	112,055	102,595	47,366	--	22,502	--	284,518
Cottonwood	--	--	--	--	--	14,258	14,258	--	--	--	28,516
All types	--	--	--	--	156,102	241,609	286,011	--	108,097	19,270	811,089

Table 14.--Number of growing-stock trees on State and privately owned timberland by species and diameter class in western Colorado, 1983

Species	Diameter class (inches at breast height)															
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand trees															
Douglas-fir	--	2,242	6,294	2,555	1,186	778	420	451	147	109	55	30	--	--	23	14,290
Ponderosa pine	--	--	584	3,654	3,552	4,666	4,364	2,375	821	285	--	211	--	114	114	20,740
Subalpine fir	1,023	1,023	--	550	199	263	--	83	--	--	--	--	--	--	--	3,141
White fir	8,362	--	--	495	218	--	178	99	--	69	--	51	--	60	--	9,532
Engelmann spruce	12,689	5,010	500	2,190	1,925	1,066	567	407	424	313	126	206	151	34	54	25,662
Total softwoods	22,074	8,275	7,378	9,444	7,080	6,773	5,529	3,415	1,392	776	181	498	151	208	191	73,365
Aspen	21,735	24,783	29,074	13,603	11,044	4,144	2,755	1,023	258	--	37	--	--	--	--	108,456
Cottonwood	9,593	--	1,157	1,037	366	602	116	241	60	161	113	--	--	--	26	13,472
Total hardwoods	31,328	24,783	30,231	14,640	11,410	4,746	2,871	1,264	318	161	150	--	--	--	26	121,928
All species	53,402	33,058	37,609	24,084	18,490	11,519	8,400	4,679	1,710	937	331	498	151	208	217	195,293

Table 15.--Number of cull and salvable dead trees on State and privately owned timberland by ownership class, and softwoods and hardwoods in western Colorado, 1983

Ownership class and species group	Cull trees			Salvable dead trees	All dead trees
	Sound	Rotten	Total		
	- - - - - - - - - - Thousand trees - - - - - - - - - -				
State:					
Softwoods	--	3	3	36	39
Hardwoods	--	42	42	459	501
Total	--	45	45	495	540
Nonindustrial private:					
Softwoods	--	92	92	834	926
Hardwoods	--	1,662	1,662	15,151	16,813
Total	--	1,754	1,754	15,985	17,739
Total:					
Softwoods	--	95	95	870	965
Hardwoods	--	1,704	1,704	15,610	17,314
Total	--	1,799	1,799	16,480	18,279

Table 16.--Net volume of growing stock on State and privately owned timberland by ownership class, forest type, and stand-size class in western Colorado, 1983

Ownership class	Forest type	Stand-size class				
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
		- - - - - - - - - - - - - - - - Thousand cublic feet - - - - - - - - - - - - - - - -				
State:						
	Douglas-fir	3,303	316	--	--	3,619
	Ponderosa pine	11,953	--	--	113	12,066
	White fir	890	--	81	--	971
	Spruce	9,640	--	--	--	9,640
	Aspen	4,569	6,624	561	--	11,754
	Cottonwood	783	--	--	--	783
	All types	31,138	6,940	642	113	38,833
Nonindustrial private:						
	Douglas-fir	88,130	9,153	--	--	97,283
	Ponderosa pine	328,281	--	--	4,378	332,659
	White fir	25,792	--	2,544	--	28,336
	Spruce	182,047	--	--	--	182,047
	Aspen	173,227	190,556	23,384	--	387,167
	Cottonwood	30,481	--	--	--	30,481
	All types	827,958	199,709	25,928	4,378	1,057,973
Total:						
	Douglas-fir	91,433	9,469	--	--	100,902
	Ponderosa pine	340,234	--	--	4,491	344,725
	White fir	26,682	--	2,625	--	29,307
	Spruce	191,687	--	--	--	191,687
	Aspen	177,796	197,180	23,945	--	398,921
	Cottonwood	31,264	--	--	--	31,264
	All types	859,096	206,649	26,570	4,491	1,096,806

Table 17.--Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class, forest type, and stand-size class in western Colorado, 1983

Ownership class	Forest type	Stand-size class				
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
		Thousand board feet, International ¼-inch rule				
State:						
	Douglas-fir	12,777	787	--	--	13,564
	Ponderosa pine	53,552	--	--	513	54,065
	White fir	2,117	--	--	--	2,117
	Spruce	44,442	--	--	--	44,442
	Aspen	15,842	7,697	--	--	23,539
	Cottonwood	2,898	--	--	--	2,898
	All types	131,628	8,484	--	513	140,625
Nonindustrial private:						
	Douglas-fir	316,292	22,806	--	--	339,098
	Ponderosa pine	1,502,081	--	--	19,942	1,522,023
	White fir	61,316	--	--	--	61,316
	Spruce	847,759	--	--	--	847,759
	Aspen	603,787	243,420	--	--	847,207
	Cottonwood	112,795	--	--	--	112,795
	All types	3,444,030	266,226	--	19,942	3,730,198
Total:						
	Douglas-fir	329,069	23,593	--	--	352,662
	Ponderosa pine	1,555,633	--	--	20,455	1,576,088
	White fir	63,433	--	--	--	63,433
	Spruce	892,201	--	--	--	892,201
	Aspen	619,629	251,117	--	--	870,746
	Cottonwood	115,693	--	--	--	115,693
	All types	3,575,658	274,710	--	20,455	3,870,823

Table 18.--Net volume of sawtimber (Scribner rule) on State and privately owned timberland by ownership class, forest type, and stand-size class in western Colorado, 1983

Ownership class	Forest type	Stand-size class				
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
		Thousand board feet, Scribner rule				
State:						
	Douglas-fir	10,863	654	--	--	11,517
	Ponderosa pine	45,900	--	--	421	46,321
	White fir	1,752	--	--	--	1,752
	Spruce	38,157	--	--	--	38,157
	Aspen	13,400	6,523	--	--	19,923
	Cottonwood	2,443	--	--	--	2,443
	All types	112,515	7,177	--	421	120,113
Nonindustrial private:						
	Douglas-fir	269,728	18,929	--	--	288,657
	Ponderosa pine	1,293,902	--	--	16,392	1,310,294
	White fir	50,755	--	--	--	50,755
	Spruce	730,903	--	--	--	730,903
	Aspen	511,005	206,839	--	--	717,844
	Cottonwood	95,072	--	--	--	95,072
	All types	2,951,365	225,768	--	16,392	3,193,525
Total:						
	Douglas-fir	280,591	19,583	--	--	300,174
	Ponderosa pine	1,339,802	--	--	16,813	1,356,615
	White fir	52,507	--	--	--	52,507
	Spruce	769,060	--	--	--	769,060
	Aspen	524,405	213,362	--	--	737,767
	Cottonwood	97,515	--	--	--	97,515
	All types	3,063,880	232,945	--	16,813	3,313,638

Table 19.--Net volume of growing stock on State and privately owned timberland by ownership class and species in western Colorado, 1983

Species	Ownership class		
	State	Nonindustrial private	Total
	Thousand cubic feet		
Douglas-fir	3,272	90,901	94,173
Ponderosa pine	12,497	340,313	352,810
Subalpine fir	378	8,938	9,316
White fir	882	25,217	26,099
Engelmann spruce	8,773	166,430	175,203
Total softwoods	25,802	631,799	657,601
Aspen	11,854	388,573	400,427
Cottonwood	1,177	37,601	38,778
Total hardwoods	13,031	426,174	439,205
All species	38,833	1,057,973	1,096,806

Table 20.--Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class and species in western Colorado, 1983

Species	Ownership class		Total
	State	Nonindustrial private	
	- - - Thousand board feet, International ¼-inch rule - - -		
Douglas-fir	12,572	331,195	343,767
Ponderosa pine	56,198	1,565,365	1,621,563
Subalpine fir	1,326	28,668	29,994
White fir	3,567	101,894	105,461
Engelmann spruce	40,403	774,572	814,975
Total softwoods	114,066	2,801,694	2,915,760
Aspen	21,864	786,801	808,665
Cottonwood	4,695	141,703	146,398
Total hardwoods	26,559	928,504	955,063
All species	140,625	3,730,198	3,870,823

Table 21.--Net volume of sawtimber (Scribner rule) on State and privately owned timberland by ownership class and species in western Colorado, 1983

Species	Ownership class		Total
	State	Nonindustrial private	
	- - - - - Thousand board feet, Scribner rule - - - -		
Douglas-fir	10,623	280,460	291,083
Ponderosa pine	48,182	1,348,270	1,396,452
Subalpine fir	1,128	24,600	25,728
White fir	3,005	85,841	88,846
Engelmann spruce	34,611	666,247	700,858
Total softwoods	97,549	2,405,418	2,502,967
Aspen	18,530	667,463	685,993
Cottonwood	4,034	120,644	124,678
Total hardwoods	22,564	788,107	810,671
All species	120,113	3,193,525	3,313,638

Table 22.--Net volume of growing stock on State and privately owned timberland by species and diameter class in western Colorado, 1983

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0	All classes
	Thousand cubic feet													
Douglas-fir	12,842	11,057	13,092	11,690	9,931	13,382	5,992	6,219	3,585	1,671	--	--	4,712	94,173
Ponderosa pine	1,491	15,600	28,749	59,201	93,634	69,136	31,414	14,950	--	13,274	--	9,854	15,507	352,810
Subalpine fir	--	2,084	1,645	3,738	--	1,849	--	--	--	--	--	--	--	9,316
White fir	--	2,628	1,032	--	4,943	4,250	--	3,622	--	3,705	--	5,919	--	26,099
Engelmann spruce	1,006	11,669	18,440	18,543	13,462	12,822	22,937	18,711	10,322	17,785	13,434	5,833	10,239	175,203
Total softwoods	15,339	43,038	62,958	93,172	121,970	101,439	60,343	43,502	13,907	36,435	13,434	21,606	30,458	657,601
Aspen	54,524	66,643	115,234	64,816	61,944	26,883	8,499	--	1,884	--	--	--	--	400,427
Cottonwood	1,696	3,545	3,092	7,517	1,755	5,049	1,264	6,060	4,829	--	--	--	3,971	38,778
Total hardwoods	56,220	70,188	118,326	72,333	63,699	31,932	9,763	6,060	6,713	--	--	--	3,971	439,205
All species	71,559	113,226	181,284	165,505	185,669	133,371	70,106	49,562	20,620	36,435	13,434	21,606	34,429	1,096,806

Table 23.--Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by species and diameter class in western Colorado, 1983

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International ¼-inch rule											
Douglas-fir	50,145	53,094	49,583	68,725	31,676	33,771	19,701	8,949	--	--	28,123	343,767
Ponderosa pine	95,678	254,251	461,448	356,006	165,633	80,199	--	71,138	--	53,023	84,187	1,621,563
Subalpine fir	4,814	16,463	--	8,717	--	--	--	--	--	--	--	29,994
White fir	3,056	--	24,084	20,352	--	15,986	--	16,040	--	25,943	--	105,461
Engelmann spruce	69,061	85,628	65,354	63,057	116,850	95,962	55,118	96,065	73,415	33,960	60,505	814,975
Total softwoods	222,754	409,436	600,469	516,857	314,159	225,918	74,819	192,192	73,415	112,926	172,815	2,915,760
Aspen	XXXXX	309,268	311,228	135,659	43,067	--	9,443	--	--	--	--	808,665
Cottonwood	XXXXX	38,145	8,847	24,742	5,921	28,240	21,989	--	--	--	18,514	146,398
Total hardwoods	XXXXX	347,413	320,075	160,401	48,988	28,240	31,432	--	--	--	18,514	955,063
All species	222,754	756,849	920,544	677,258	363,147	254,158	106,251	192,192	73,415	112,926	191,329	3,870,823

Table 24.--Net volume of sawtimber (Scribner rule) on State and privately owned timberland by species and diameter class in western Colorado, 1983

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	44,092	45,667	41,112	56,317	25,653	28,524	17,100	7,589	--	--	25,029	291,083
Ponderosa pine	75,542	211,500	397,940	310,412	145,406	70,783	--	62,939	--	47,047	74,883	1,396,452
Subalpine fir	4,284	14,216	--	7,228	--	--	--	--	--	--	--	25,728
White fir	2,439	--	19,770	16,443	--	12,843	--	14,262	--	23,089	--	88,846
Engelmann spruce	61,097	72,505	54,124	51,489	97,204	81,261	48,915	84,972	65,217	30,225	53,849	700,858
Total softwoods	187,454	343,888	512,946	441,889	268,263	193,411	66,015	169,762	65,217	100,361	153,761	2,502,967
Aspen	XXXXX	264,672	262,502	114,234	36,517	--	8,068	--	--	--	--	685,993
Cottonwood	XXXXX	30,548	7,286	21,081	5,072	24,808	19,405	--	--	--	16,478	124,678
Total hardwoods	XXXXX	295,220	269,788	135,315	41,589	24,808	27,473	--	--	--	16,478	810,671
All species	187,454	639,108	782,734	577,204	309,852	218,219	93,488	169,762	65,217	100,361	170,239	3,313,638

Table 25.--Net volume of timber on State and privately owned timberland by class of timber, and softwoods and hardwoods in western Colorado, 1983

Class of timber	Softwoods	Hardwoods	All classes
	Thousand cubic feet		
Sawtimber trees:			
Saw-log portion	527,766	145,590	673,356
Upper-stem portion	71,458	48,881	120,339
Total	599,224	194,471	793,695
Poletimber trees	58,377	244,734	303,111
All growing stock trees	657,601	439,205	1,096,806
Sound cull trees	--	--	--
Rotten cull trees	2,279	6,567	8,846
Salvable dead trees	21,801	42,357	64,158
All timber	681,681	488,129	1,169,810

Table 26.--Net volume of growing stock on State and privately owned timberland by forest type and species in western Colorado, 1983

Forest type	Species									
	Douglas-fir	Ponderosa pine	Subalpine fir	White fir	Engelmann spruce	Total softwoods	Aspen	Cottonwood	Total hardwoods	All species
	Thousand cubic feet									
Douglas-fir	71,953	5,782	4,728	--	17,056	99,519	1,383	--	1,383	100,902
Ponderosa pine	1,827	340,747	--	--	--	342,574	--	2,151	2,151	344,725
White fir	5,127	--	--	10,780	1,926	17,833	11,474	--	11,474	29,307
Spruce	10,759	4,090	1,849	15,319	152,037	184,054	2,270	5,363	7,633	191,687
Aspen	4,507	2,191	2,739	--	4,184	13,621	385,300	--	385,300	398,921
Cottonwood	--	--	--	--	--	--	--	31,264	31,264	31,264
All types	94,173	352,810	9,316	26,099	175,203	657,601	400,427	38,778	439,205	1,096,806

Table 27.--Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by forest type and species in western Colorado, 1983

Forest type	Species									
	Douglas-fir	Ponderosa pine	Subalpine fir	White fir	Engelmann spruce	Total softwoods	Aspen	Cottonwood	Total hardwoods	All species
	Thousand board feet, International ¼-inch rule									
Douglas-fir	237,128	26,750	12,125	--	76,659	352,662	--	--	--	352,662
Ponderosa pine	9,033	1,560,813	--	--	--	1,569,846	--	6,242	6,242	1,576,088
White fir	26,763	--	--	36,670	--	63,433	--	--	--	63,433
Spruce	50,743	22,151	8,717	68,791	717,336	867,738	--	24,463	24,463	892,201
Aspen	20,100	11,849	9,152	--	20,980	62,081	808,665	--	808,665	870,746
Cottonwood	--	--	--	--	--	--	--	115,693	115,693	115,693
All types	343,767	1,621,563	29,994	105,461	814,975	2,915,760	808,665	146,398	955,063	3,870,823

Table 28.--Net volume of sawtimber (Scribner rule) on State and privately owned timberland by forest type and species in western Colorado, 1983

Forest type	Species									
	Douglas-fir	Ponderosa pine	Subalpine fir	White fir	Engelmann spruce	Total softwoods	Aspen	Cottonwood	Total hardwoods	All species
	Thousand board feet, Scribner rule									
Douglas-fir	200,620	22,714	10,723	--	66,117	300,174	--	--	--	300,174
Ponderosa pine	7,503	1,343,616	--	--	--	1,351,119	--	5,496	5,496	1,356,615
White fir	21,817	--	--	30,690	--	52,507	--	--	--	52,507
Spruce	44,560	19,599	7,228	58,156	617,850	747,393	--	21,667	21,667	769,060
Aspen	16,583	10,523	7,777	--	16,891	51,774	685,993	--	685,993	737,767
Cottonwood	--	--	--	--	--	--	--	97,515	97,515	97,515
All types	291,083	1,396,452	25,728	88,846	700,858	2,502,967	685,993	124,678	810,671	3,313,638

Table 29.--Net annual growth of growing stock on State and privately owned timberland by ownership class and species in western Colorado, 1982

Species	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - - - Thousand cubic feet - - - - - - - - -		
Douglas-fir	98	2,660	2,758
Ponderosa pine	252	6,702	6,954
Subalpine fir	-5	-150	-155
White fir	15	433	448
Engelmann spruce	207	3,950	4,157
Total softwoods	567	13,595	14,162
Aspen	139	3,806	3,945
Cottonwood	29	834	863
Total hardwoods	168	4,640	4,808
All species	735	18,235	18,970

Table 30.--Net annual growth of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982

Species	Ownership class		
	State	Nonindustrial private	Total
	- - Thousand board feet, International ¼-inch rule - -		
Douglas-fir	212	6,861	7,073
Ponderosa pine	1,280	34,614	35,894
Subalpine fir	-61	-1,806	-1,867
White fir	160	4,616	4,776
Engelmann spruce	1,009	19,125	20,134
Total softwoods	2,600	63,410	66,010
Aspen	974	39,931	40,905
Cottonwood	311	10,732	11,043
Total hardwoods	1,285	50,663	51,948
All species	3,885	114,073	117,958

Table 31.--Net annual growth of sawtimber (Scribner rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982

Species	Ownership class		Total
	State	Nonindustrial private	
	- - - - - Thousand board feet, Scribner rule - - - -		
Douglas-fir	173	5,610	5,783
Ponderosa pine	1,173	31,602	32,775
Subalpine fir	-48	-1,430	-1,478
White fir	128	3,702	3,830
Engelmann spruce	846	16,123	16,969
Total softwoods	2,272	55,607	57,879
Aspen	844	34,575	35,419
Cottonwood	254	8,640	8,894
Total hardwoods	1,098	43,215	44,313
All species	3,370	98,822	102,192

Table 32.--Net annual growth of growing stock on State and privately owned timberland by species and diameter class in western Colorado, 1982

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand cubic feet													
Douglas-fir	827	602	407	329	140	237	73	69	37	16	--	--	21	2,758
Ponderosa pine	15	432	775	1,406	1,998	1,310	602	142	--	122	--	75	77	6,954
Subalpine fir	--	169	142	118	--	7	-591	--	--	--	--	--	--	-155
White fir	--	29	36	--	123	113	--	77	--	21	--	49	--	448
Engelmann spruce	17	554	738	882	417	289	381	146	172	221	182	95	63	4,157
Total softwoods	859	1,786	2,098	2,735	2,678	1,956	465	434	209	380	182	219	161	14,162
Aspen	2,116	346	561	502	683	-334	58	--	13	--	--	--	--	3,945
Cottonwood	70	210	131	238	62	187	5	180	37	-263	--	--	6	863
Total hardwoods	2,186	556	692	740	745	-147	63	180	50	-263	--	--	6	4,808
All species	3,045	2,342	2,790	3,475	3,423	1,809	528	614	259	117	182	219	167	18,970

Table 33.--Net annual growth of sawtimber (International ¼-inch rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International ¼-inch rule											
Douglas-fir	1,721	1,918	806	1,354	416	410	237	80	--	--	131	7,073
Ponderosa pine	2,829	8,281	11,588	7,511	3,398	786	--	668	--	409	424	35,894
Subalpine fir	406	666	--	36	-2,975	--	--	--	--	--	--	-1,867
White fir	3,056	--	617	491	--	290	--	88	--	234	--	4,776
Engelmann spruce	3,993	4,905	2,268	1,511	2,039	819	1,058	1,382	1,160	608	391	20,134
Total softwoods	12,005	15,770	15,279	10,903	2,878	2,305	1,295	2,218	1,160	1,251	946	66,010
Aspen	XXXXX	38,273	3,824	-1,542	286	--	64	--	--	--	--	40,905
Cottonwood	XXXXX	10,140	307	838	18	735	149	-1,175	--	--	31	11,043
Total hardwoods	XXXXX	48,413	4,131	-704	304	735	213	-1,175	--	--	31	51,948
All species	12,005	64,183	19,410	10,199	3,182	3,040	1,508	1,043	1,160	1,251	977	117,958

Table 34.--Net annual growth of sawtimber (Scribner rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	1,462	1,509	634	1,065	327	356	234	79	--	--	117	5,783
Ponderosa pine	3,181	7,415	10,372	6,721	3,041	704	--	597	--	366	378	32,775
Subalpine fir	362	522	--	28	-2,390	--	--	--	--	--	--	-1,478
White fir	2,439	--	484	384	--	227	--	88	--	208	--	3,830
Engelmann spruce	3,484	3,876	1,780	1,187	1,727	733	969	1,280	1,044	541	348	16,969
Total softwoods	10,928	13,322	13,270	9,385	2,705	2,020	1,203	2,044	1,044	1,115	843	57,879
Aspen	XXXXX	33,070	3,301	-1,256	249	--	55	--	--	--	--	35,419
Cottonwood	XXXXX	8,020	284	776	17	674	136	-1,040	--	--	27	8,894
Total hardwoods	XXXXX	41,090	3,585	-480	266	674	191	-1,040	--	--	27	44,313
All species	10,928	54,412	16,855	8,905	2,971	2,694	1,394	1,004	1,044	1,115	870	102,192

Table 35.--Annual mortality of growing stock on State and privately owned timberland by ownership class and species in western Colorado, 1982

Species	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - Thousand cubic feet - - - - - - - -		
Subalpine fir	20	571	591
Total softwoods	20	571	591
Aspen	172	5,567	5,739
Cottonwood	--	263	263
Total hardwoods	172	5,830	6,002
All species	192	6,401	6,593

Table 36.--Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982

Species	Ownership class		Total
	State	Nonindustrial private	
	- - Thousand board feet, International ¼-inch rule - -		
Subalpine fir	100	2,876	2,976
Total softwoods	100	2,876	2,976
Aspen	142	5,143	5,285
Cottonwood	--	1,175	1,175
Total hardwoods	142	6,318	6,460
All species	242	9,194	9,436

Table 37.--Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by ownership class and species in western Colorado, 1982

Species	Ownership class		
	State	Nonindustrial private	Total
	- - - - - Thousand board feet, Scribner rule - - - -		
Subalpine fir	80	2,310	2,390
Total softwoods	80	2,310	2,390
Aspen	119	4,309	4,428
Cottonwood	--	1,040	1,040
Total hardwoods	119	5,349	5,468
All species	199	7,659	7,858

Table 38.--Annual mortality of growing stock on State and privately owned timberland by species and diameter class in western Colorado, 1982

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	- Thousand cubic feet -													
Subalpine fir	--	--	--	--	--	--	591	--	--	--	--	--	--	591
Total softwoods	--	--	--	--	--	--	591	--	--	--	--	--	--	591
Aspen	1,881	1,491	1,312	495	--	560	--	--	--	--	--	--	--	5,739
Cottonwood	--	--	--	--	--	--	--	--	--	263	--	--	--	263
Total hardwoods	1,881	1,491	1,312	495	--	560	--	--	--	263	--	--	--	6,002
All species	1,881	1,491	1,312	495	--	560	591	--	--	263	--	--	--	6,593

Table 39.--Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International ¼-inch rule											
Subalpine fir	--	--	--	--	2,976	--	--	--	--	--	--	2,976
Total softwoods	--	--	--	--	2,976	--	--	--	--	--	--	2,976
Aspen	XXXXX	2,544	--	2,741	--	--	--	--	--	--	--	5,285
Cottonwood	XXXXX	--	--	--	--	--	--	1,175	--	--	--	1,175
Total hardwoods	XXXXX	2,544	--	2,741	--	--	--	1,175	--	--	--	6,460
All species	--	2,544	--	2,741	2,976	--	--	1,175	--	--	--	9,436

Table 40.--Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by species and diameter class in western Colorado, 1982

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Subalpine fir	--	--	--	--	2,390	--	--	--	--	--	--	2,390
Total softwoods	--	--	--	--	2,390	--	--	--	--	--	--	2,390
Aspen	XXXXX	2,127	--	2,301	--	--	--	--	--	--	--	4,428
Cottonwood	XXXXX	--	--	--	--	--	--	1,040	--	--	--	1,040
Total hardwoods	XXXXX	2,127	--	2,301	--	--	--	1,040	--	--	--	5,468
All species	--	2,127	--	2,301	2,390	--	--	1,040	--	--	--	7,858

Table 41.--Annual mortality of growing stock on State and privately owned timberland by cause of death and species in western Colorado, 1982

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand cubic feet								
Subalpine fir	591	--	--	--	--	--	--	--	591
Total softwoods	591	--	--	--	--	--	--	--	591
Aspen	--	1,669	--	248	229	--	--	3,593	5,739
Cottonwood	--	--	--	--	--	--	--	263	263
Total hardwoods	--	1,669	--	248	229	--	--	3,856	6,002
All species	591	1,669	--	248	229	--	--	3,856	6,593

Table 42.--Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by cause of death and species in western Colorado, 1982

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, International ¼-inch rule								
Subalpine fir	2,976	--	--	--	--	--	--	--	2,976
Total softwoods	2,976	--	--	--	--	--	--	--	2,976
Aspen	--	--	--	--	--	--	--	5,285	5,285
Cottonwood	--	--	--	--	--	--	--	1,175	1,175
Total hardwoods	--	--	--	--	--	--	--	6,460	6,460
All species	2,976	--	--	--	--	--	--	6,460	9,436

Table 43.--Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by cause of death and species in western Colorado, 1982

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	- - - - - - - - - - - - - - - - Thousand board feet, Scribner rule - - - - - - - - - - - - - - - -								
Subalpine fir	2,390	--	--	--	--	--	--	--	2,390
Total softwoods	2,390	--	--	--	--	--	--	--	2,390
Aspen	--	--	--	--	--	--	--	4,428	4,428
Cottonwood	--	--	--	--	--	--	--	1,040	1,040
Total hardwoods	--	--	--	--	--	--	--	5,468	5,468
All species	2,390	--	--	--	--	--	--	5,468	7,858

Table 44.--Area of State and privately owned woodland by ownership class and forest type in western Colorado, 1983

Forest type	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - - - - - Acres - - - - - - - - - -		
Pinyon-juniper	28,368	774,752	803,120
Juniper	11,445	200,908	212,353
Total woodland softwoods	39,813	975,660	1,015,473
Oak	12,841	406,229	419,070
Riparian	--	--	--
Other west hardwoods	--	--	--
Total woodland hardwoods	12,841	406,229	419,070
All types	52,654	1,381,889	1,434,543

Table 45.--Net volume of State and privately owned woodland by ownership class and species in western Colorado, 1983

Species	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - Thousand cubic feet - - - - - -		
Douglas-fir	4	121	125
Ponderosa pine	--	--	--
Aspen	--	--	--
Pinyon/juniper	20,966	576,881	597,847
Woodland hardwoods	1,856	64,197	66,053
All species	22,826	641,199	664,025

Table 46.--Net annual growth of State and privately owned woodland by ownership class and species in western Colorado, 1982

Species	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - Thousand cubic feet - - - - - -		
Douglas-fir	4	121	125
Ponderosa pine	--	--	--
Aspen	--	--	--
Pinyon/juniper	128	4,766	4,894
Woodland hardwoods	107	3,737	3,844
All species	239	8,624	8,863

Table 47.--Annual mortality of State and privately owned woodland by ownership class and species in western Colorado, 1982

Species	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - Thousand cubic feet - - - - - -		
Douglas-fir	--	--	--
Ponderosa pine	--	--	--
Aspen	--	--	--
Pinyon/juniper	115	1,474	1,589
Woodland hardwoods	6	221	227
All species	121	1,695	1,816

Table 48.--Area of State and privately owned timberland by county and ownership class in western Colorado, 1983

County	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - - - - - - - Acres - - - - - - - - - - - -		
Archuleta	1,920	154,214	156,134
Delta	371	25,549	25,920
Dolores	3,009	29,669	32,678
Garfield	--	135,615	135,615
La Plata	5,615	103,627	109,242
Mesa	784	65,748	66,532
Moffat	4,235	34,768	39,003
Montezuma	618	30,090	30,708
Montrose	946	37,276	38,222
Ouray	279	52,425	52,704
Rio Blanco	8,614	53,295	61,909
San Miguel	1,423	60,999	62,422
Total	27,814	783,275	811,089

Table 49.--Net volume of growing stock on State and privately owned timberland by county and ownership class in western Colorado, 1983

County	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - - Thousand cubic feet - - - - - - - - -		
Archuleta	2,868	212,834	215,702
Delta	369	33,176	33,545
Dolores	4,313	40,968	45,281
Garfield	--	187,887	187,887
La Plata	8,137	142,883	151,020
Mesa	1,187	82,723	83,910
Moffat	5,302	40,822	46,124
Montezuma	873	39,022	39,895
Montrose	1,285	49,485	50,770
Ouray	320	74,128	74,448
Rio Blanco	12,216	68,435	80,651
San Miguel	1,963	85,610	87,573
Total	38,833	1,057,973	1,096,806

Table 50.--Net volume of sawtimber (International ¼-inch rule) on State and privately owned timberland by county and ownership class in western Colorado, 1983

County	Ownership class		Total
	State	Nonindustrial private	
	- - Thousand board feet International ¼-inch rule - -		
Archuleta	9,874	862,336	872,210
Delta	1,405	101,746	103,151
Dolores	13,631	123,594	137,225
Garfield	--	631,086	631,086
La Plata	35,637	608,639	644,276
Mesa	4,339	242,030	246,369
Moffat	16,951	114,883	131,834
Montezuma	3,698	144,497	148,195
Montrose	4,557	151,894	156,451
Ouray	790	260,004	260,794
Rio Blanco	43,097	211,543	254,640
San Miguel	6,646	277,946	284,592
Total	140,625	3,730,198	3,870,823

Table 51.--Net volume of sawtimber (Scribner rule) on State and privately owned timberland by county and ownership class in western Colorado, 1983

County	Ownership class		Total
	State	Nonindustrial private	
	- - - - - Thousand board feet, Scribner rule - - - - -		
Archuleta	8,415	740,945	749,360
Delta	1,187	86,744	87,931
Dolores	11,623	105,649	117,272
Garfield	--	539,312	539,312
La Plata	30,648	524,333	554,981
Mesa	3,667	205,491	209,158
Moffat	14,459	97,683	112,142
Montezuma	3,176	124,016	127,192
Montrose	3,922	129,266	133,188
Ouray	670	222,467	223,137
Rio Blanco	36,659	180,431	217,090
San Miguel	5,687	237,188	242,875
Total	120,113	3,193,525	3,313,638

Table 52.--Net annual growth of growing stock on State and privately owned timberland by county and ownership class in western Colorado, 1982

County	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - - Thousand cubic feet - - - - - - - - -		
Archuleta	52	4,112	4,164
Delta	12	518	530
Dolores	59	535	594
Garfield	--	3,265	3,265
La Plata	170	2,780	2,950
Mesa	28	1,352	1,380
Moffat	83	607	690
Montezuma	18	678	696
Montrose	22	740	762
Ouray	3	1,259	1,262
Rio Blanco	256	1,074	1,330
San Miguel	32	1,315	1,347
Total	735	18,235	18,970

Table 53.--Net annual growth of sawtimber (International ¼-inch rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982

County	Ownership class		
	State	Nonindustrial private	Total
	- - Thousand board feet, International ¼-inch rule - -		
Archuleta	234	19,478	19,712
Delta	134	4,398	4,532
Dolores	478	5,306	5,784
Garfield	--	22,408	22,408
La Plata	910	14,277	15,187
Mesa	99	10,712	10,811
Moffat	472	4,091	4,563
Montezuma	82	4,004	4,086
Montrose	141	5,592	5,733
Ouray	51	7,934	7,985
Rio Blanco	1,121	6,647	7,768
San Miguel	163	9,226	9,389
Total	3,885	114,073	117,958

Table 54.--Net annual growth of sawtimber (Scribner rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982

County	Ownership class		
	State	Nonindustrial private	Total
	- - - - - Thousand board feet, Scribner rule - - - - -		
Archuleta	204	17,108	17,312
Delta	109	3,756	3,865
Dolores	416	4,596	5,012
Garfield	--	19,336	19,336
La Plata	789	12,499	13,288
Mesa	86	9,123	9,209
Moffat	410	3,493	3,903
Montezuma	72	3,479	3,551
Montrose	123	4,793	4,916
Ouray	44	6,868	6,912
Rio Blanco	975	5,756	6,731
San Miguel	142	8,015	8,157
Total	3,370	98,822	102,192

Table 55.--Annual mortality of growing stock on State and privately owned timberland by county and ownership class in western Colorado, 1982

County	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - - Thousand cubic feet - - - - - - - - -		
Archuleta	18	781	799
Delta	--	273	273
Dolores	37	378	415
Garfield	--	1,219	1,219
La Plata	7	332	339
Mesa	4	706	710
Moffat	40	385	425
Montezuma	2	230	232
Montrose	7	434	441
Ouray	4	453	457
Rio Blanco	58	550	608
San Miguel	15	660	675
Total	192	6,401	6,593

Table 56.--Annual mortality of sawtimber (International ¼-inch rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982

County	Ownership class		Total
	State	Nonindustrial private	
	- - Thousand board feet, International ¼-inch rule - -		
Archuleta	33	1,634	1,667
Delta	--	314	314
Dolores	38	425	463
Garfield	--	1,529	1,529
La Plata	27	954	981
Mesa	--	631	631
Moffat	47	474	521
Montezuma	4	441	445
Montrose	14	607	621
Ouray	4	722	726
Rio Blanco	38	664	702
San Miguel	37	799	836
Total	242	9,194	9,436

Table 57.--Annual mortality of sawtimber (Scribner rule) on State and privately owned timberland by county and ownership class in western Colorado, 1982

County	Ownership class		
	State	Nonindustrial private	Total
	- - - - - Thousand board feet, Scribner rule - - - - -		
Archuleta	27	1,383	1,410
Delta	--	260	260
Dolores	32	352	384
Garfield	--	1,257	1,257
La Plata	22	797	819
Mesa	--	527	527
Moffat	39	395	434
Montezuma	3	371	374
Montrose	11	506	517
Ouray	3	596	599
Rio Blanco	31	552	583
San Miguel	31	663	694
Total	199	7,659	7,858

Table 58.--Area of State and privately owned woodland by county and ownership class in western Colorado, 1983

County	Ownership class		
	State	Nonindustrial private	Total
	- - - - - - - - - - - - - - Acres - - - - - - - - - - - - - -		
Archuleta	485	126,215	126,700
Delta	1,079	54,675	55,754
Dolores	2,354	49,066	51,420
Garfield	1,844	140,619	142,463
La Plata	4,740	204,162	208,902
Mesa	411	130,096	130,507
Moffat	20,531	101,023	121,554
Montezuma	2,462	269,476	271,938
Montrose	2,771	102,929	105,700
Ouray	2,215	56,484	58,699
Rio Blanco	7,988	74,611	82,599
San Miguel	5,774	72,533	78,307
Total	52,654	1,381,889	1,434,543

Table 59.--Net volume of State and privately owned woodland by county and ownership class in western Colorado, 1983

County	Ownership class		Total
	State	Nonindustrial private	
	Thousand cubic feet		
Archuleta	199	68,927	69,126
Delta	495	23,976	24,471
Dolores	574	17,926	18,500
Garfield	805	50,169	50,974
La Plata	1,678	117,143	118,821
Mesa	193	55,765	55,958
Moffat	8,115	32,739	40,854
Montezuma	1,615	157,126	158,741
Montrose	1,772	43,803	45,575
Ouray	1,425	27,126	28,551
Rio Blanco	3,239	21,842	25,081
San Miguel	2,716	24,657	27,373
Total	22,826	641,199	664,025

Table 60.--Net annual growth of State and privately owned woodland by county and ownership class in western Colorado, 1982

County	Ownership class		Total
	State	Nonindustrial private	
	Thousand cubic feet		
Archuleta	4	862	866
Delta	4	358	362
Dolores	15	308	323
Garfield	14	965	979
La Plata	21	1,162	1,183
Mesa	4	926	930
Moffat	58	484	542
Montezuma	14	1,455	1,469
Montrose	14	714	728
Ouray	21	426	447
Rio Blanco	42	470	512
San Miguel	28	494	522
Total	239	8,624	8,863

Table 61.--Annual mortality of State and privately owned woodland by county and ownership class in western Colorado, 1982

County	Ownership class		Total
	State	Nonindustrial private	
	- - - - - - - - - Thousand cubic feet - - - - - - - - -		
Archuleta	([1])	207	207
Delta	2	55	57
Dolores	3	68	71
Garfield	1	152	153
La Plata	10	228	238
Mesa	--	139	139
Moffat	66	218	284
Montezuma	5	246	251
Montrose	6	126	132
Ouray	([1])	42	42
Rio Blanco	16	119	135
San Miguel	12	95	107
Total	121	1,695	1,816

[1]Less than 500 cubic feet.

Angele, Frank E.; Inama, Velma S. 1987. Western Colorado: forest statistics for State and private land, 1983. Resour. Bull. INT-42. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 42 p.

Presents land area, timberland area, woodland area, timber inventory, and growth and mortality data for 12 counties in western Colorado. Information and statistical tables are based on Forest Survey data collected from 1981 through 1984 and cover State and private forest resources.

KEYWORDS: timberland, woodland, growing-stock volume, net annual growth, roundwood harvest, fuelwood harvest

INTERMOUNTAIN RESEARCH STATION

The Intermountain Research Station provides scientific knowledge and technology to improve management, protection, and use of the forests and rangelands of the Intermountain West. Research is designed to meet the needs of National Forest managers, Federal and State agencies, industry, academic institutions, public and private organizations, and individuals. Results of research are made available through publications, symposia, workshops, training sessions, and personal contacts.

The Intermountain Research Station territory includes Montana, Idaho, Utah, Nevada, and western Wyoming. Eighty-five percent of the lands in the Station area, about 231 million acres, are classified as forest or rangeland. They include grasslands, deserts, shrublands, alpine areas, and forests. They provide fiber for forest industries, minerals and fossil fuels for energy and industrial development, water for domestic and industrial consumption, forage for livestock and wildlife, and recreation opportunities for millions of visitors.

Several Station units conduct research in additional western States, or have missions that are national or international in scope.

Station laboratories are located in:

Boise, Idaho

Bozeman, Montana (in cooperation with Montana State University)

Logan, Utah (in cooperation with Utah State University)

Missoula, Montana (in cooperation with the University of Montana)

Moscow, Idaho (in cooperation with the University of Idaho)

Ogden, Utah

Provo, Utah (in cooperation with Brigham Young University)

Reno, Nevada (in cooperation with the University of Nevada)

USDA policy prohibits discrimination because of race, color, national origin, sex, age, religion, or handicapping condition. Any person who believes he or she has been discriminated against in any USDA-related activity should immediately contact the Secretary of Agriculture, Washington, DC 20250.